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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,924	11/20/2000	Andrew Bamhart	193929US42	8208

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Hughes Electronic Corporation  
Patent Docket Administration  
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Bldg 1 Mail Stop A109  
El Segundo, CA 90245-0956

EXAMINER

PHAN, MAN U

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/716,924

Applicant(s)

BARNHART, ANDREW

Examiner

Man Phan

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,13,14,25,26,35 and 36 is/are rejected.
- 7) ☒ Claim(s) 3-12,15-24,27-34 and 37-45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The application of Barnhart for an "Available bandwidth control mechanism" filed 11/20/2000 has been examined. Claims 1-45 are pending in the application.

#### ***Claim Rejections - 35 USC ' 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 recites limitation "the control sequence number" and "the measurement period" in line 2. There is insufficient antecedent basis for these limitations in the claims.

Claim 6 recites limitation "the control sequence number" in line 2. There is insufficient antecedent basis for these limitations in the claims.

Claim 25 recites limitation "the destination site" in line 4. There is insufficient antecedent basis for these limitations in the claims.

Claim 39 recites limitation "the control sequence number" in line 5. There is insufficient antecedent basis for these limitations in the claims.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 13-14, 25-26, 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou et al. (US#6,118,791) in view of Proctor et al. (US#5,898,696).

In so far as understood, with respect to claims 25, 26, Fichou et al. (US#6,118,791) and Proctor et al. (US#5,898,696) disclose a novel method and system for controlling bandwidth allocation utilizing the traffic control processing logic. Fichou discloses in Fig. 3 a detailed block diagram illustrated the operation of an Access Control Function (ACF) device 30 and the Connection agent 31 within one network node, in which the information provided by all the token utilization devices, such as 35, attached to the individual local connections of the Access Control Function device 30 attached to the considered access link (*determining utilization associated with the destination site based on the metrics*), are fed into an allocated bandwidth computing device 36 within the Connection Agent device 31. This computing device 36 keeps tracking the bandwidth currently allocated to each connection k of the considered port (*computing a difference between the determined utilization and a target utilization*). The computing device 36, in turn, drives a rate updating device 37 controlling the token rate device 34. The computing device 36, is provided, upon request, with all required Explicit Rates (ER.sub.l) and numbers of Non-Reserved connections (N.sub.NRI) available in the Topology Data Base as updated by the various

TDU.sub.S) fed into the considered node Control Point (e.g. CP0) to enable computing the updated token generation rate  $R_{sub.l,k,t}$  to be assigned to the connection k on link l at time t, and then drive the token rate device 34 (See also Fig. 5; Col. 7, lines 4 plus and Col. 10, lines 62 plus).

However, Fichou does not disclose expressly the step of computing a correction value based upon the difference, and outputting a control value for allocating bandwidth. In the same field of endeavor, Proctor et al. (US#5,898,696) discloses a method and system for controlling an encoding rate in a communication system utilizes feedforward rate information (48) and/or rate desirability information (50) sent from each of a plurality of variable rate vocoders (34) to a communication link output controller (24), such as a network arbiter. The communication link output controller (24) then sends a feedback control signal (32) to a selected variable rate vocoder to change the encoding rate of the selected variable rate vocoder to facilitate re-encoding of the speech packet when a bottleneck is detected. In another embodiment, the network arbiter (134) may additionally and independently modify speech packet data when it determines that a bottleneck may occur. The network arbiter (134) also communicates a packet modification control signal (132) for the variable rate vocoder that generated the dropped packet so that the corresponding variable rate vocoder can adjust its filter states to maintain convergence (Col. 3; lines 1 plus). Proctor further teaches in Fig. 3 a flow chart illustrated a method of controlling an encoding rate, in which the network arbiter 24 receives projected rate data 48 from each of the variable rate vocoders 34 as shown in block 62. With all of the projected rate data 48 from each of the variable rate vocoders, the network arbiter 24 determines the

required link bandwidth as indicated in block 64. The determined required link bandwidth is compared to the available link bandwidth value stored in memory 46 as shown in block 66. If the control processor 44 determines that the required bandwidth is exceeding the available bandwidth as shown in block 68, the control processor 44 generates the vocoder rate control signal 32 to selectively control the vocoder whose speech packet would cause the required bandwidth to exceed the available bandwidth as shown in block 70 (Col. 6, lines 47 plus).

Regarding claims 1-2 and 13-14, they are method and system claims corresponding to the apparatus claims 25-26 above. Therefore, claims 1-2 and 13-14 are analyzed and rejected as previously discussed with respect to claims 25-26.

With respect to claims 35-36, These claims differ from claims Fichou in view of Proctor in that the claims recited a computer program product for performing the same basis of steps and apparatus of the prior arts as discussed in the rejection of claims 1-2, 13-14 and 25-26 above. It would have been obvious to a person of ordinary skill in the art to implement a computer program product in Fichou in view of Proctor for performing the steps and apparatus as recited in the claims with the motivation being to provide the efficient enhancement to the controlling bandwidth allocations, and easy to maintenance, upgrade.

One skilled in the art would have recognized the need for effectively and efficiently controlling bandwidth allocations for a switching communication system, and would have applied Proctor's teaching of the improved data throughput over a limited bandwidth link into Fichou's novel use of the allocating operating bandwidth in data communication network. Therefore, It would have been obvious to a person of ordinary skill in the art at the

time of the invention was made to apply Proctor's Method and system for controlling an encoding rate in a variable rate communication system into Fichou's adaptive bandwidth allocation method for non-reserved traffic in a high speed data transmission network, and system for implementing the method with the motivation being to provide a method and system for controlling bandwidth allocations, and providing congestion avoidance in a switching communication system.

***Allowable Subject Matter***

5. Claims 3-12, 15-24, 27-34, and 37-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein the gain and filtering module generates a control sequence number corresponding to the control value; wherein the scheduler reads the control sequence number associated with the measurement period, the control sequence number being included in a metric message that contains the bandwidth metrics; wherein the reference control value having an index based upon a round trip control time (RTCT) between sending of the control value and a subsequent control value; wherein RTCT includes propagation delay, message transmit/receive delays, and message processing delay, and wherein the control value is sent to the traffic control processing logic on a predetermined interval, the index being based

upon a ratio of the RTCT and the predetermined interval, as recited in the claims. The prior art of record also fails to disclose or suggest wherein the correction value is further based upon a split gain that specifies at least one of a first gain and a second gain based upon the computed difference, and the correction value is further based upon a unity gain, as specifically recited in the claims.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Gao et al. (US#6,738,350) is cited to show congestion avoidance approach for a switching communication system with transmission constraints.

The Kohzuki et al. (US#6,657,964) is cited to show terminal with bandwidth control function.

The Vu et al. (US#6,587,436) is cited to show the method and apparatus for allocation of available bandwidth.

The Matthews et al. (US#6,084,858) is cited to show the distribution of communication load over multiple paths based upon link utilization.

The Blanco et al. (US#6,249,530) is cited to show the network bandwidth control.

The Chapman et al. (US#6,628,609) is cited to show the method and apparatus for simple IP-layer bandwidth allocation using ingress control of egress bandwidth.



The Chapman et al. (US#6,233,245) is cited to show the method and apparatus for management of bandwidth in a data communication network.

The Fan et al. (US#6,408,005) is cited to show dynamic rate control scheduler for ATM networks.

The Yona et al. (US#6,418,120) is cited to show the congestion avoidance mechanism for ATM switches.

The Simpson et al. (US#6,229,789) is cited to show the congestion avoidance mechanism in an ATM switch.

The Ginossar (US#6,477,143) is cited to show the method and apparatus for packet network congestion avoidance and control

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149.

The examiner can normally be reached on Mon - Fri from 6:30 to 3:00 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

8. **Any response to this action should be mailed to:**

Art Unit: 2665

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:** (703) 305-9051, (for formal communications intended for entry)

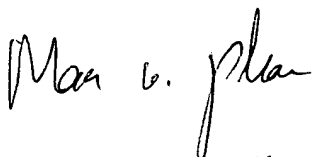
**Or:** (703) 305-3988 (for informal or draft communications, please label "PROPOSED"

or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive,  
Arlington. VA., Sixth Floor (Receptionist).

Mphan

09/28/2004.



MAN U. PHAN  
PRIMARY EXAMINER